



Incorporated

Hydrogen Analyzer Discrete Sampler Instruction Manual

Unpacking and Inspection

The user should always inspect the shipping package for damage. If there is damage evident, please save the package and notify the shipping company immediately.

General Description

The Hycision hydrogen analyzer is a hand-held device for measuring hydrogen content in a gas mixture, and is specifically designed to confirm the hydrogen content in a gas mixture similar to normal air or nitrogen. The analyzer is powered by rechargeable batteries. (Figure 1 shows the top panel.)

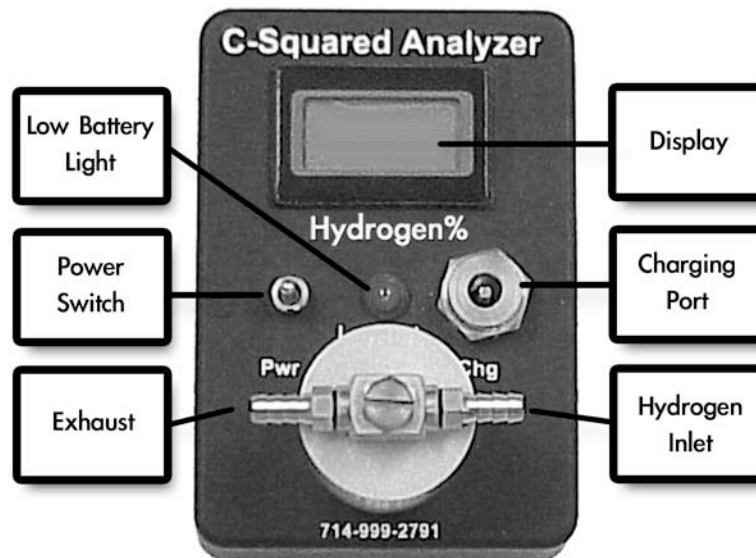


Fig. 1. Unit top panel view.

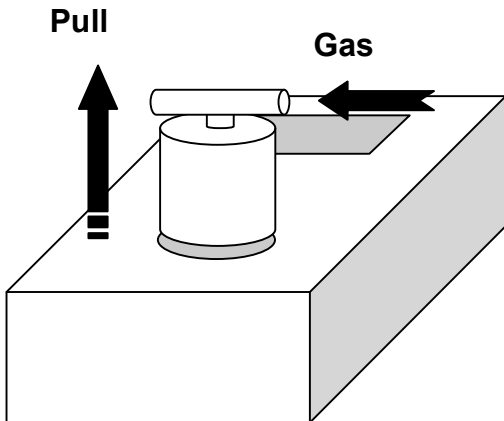
The LCD displays the hydrogen content from 0 to 100% with 0.1% resolution for Hycision-100, and from 0 – 10% with 0.01% resolution for Hycision-10. When the low battery indicator LED is on, the unit's battery needs to be recharged prior to use. The patented sample unit allows the user to flow a gas mixture through the sensor inside the unit, as well as to seal the gas mixture in the sensor for measurement.

Operation

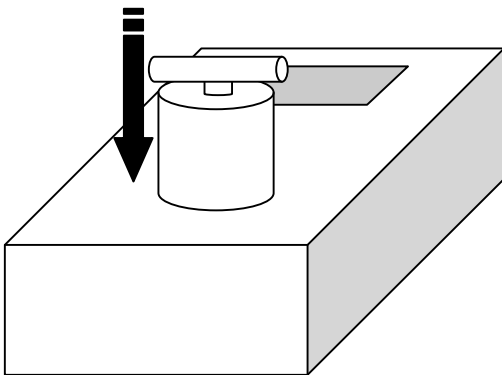
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The operation of the unit is very simple and does not require a flow control regulator. The operation is as simple as 1, 2, 3.



Step 1. Pull up the sensor cap and flow gas mixture through the gas inlets with a steady flow while using a finger to block the exhaust for about 10 seconds. (Enough time to clear the line of any existing gas).



Step 2. Push the sensor cap down firmly to stop the gas flow and seal the gas mixture inside the device.

Step 3. Turn on the power switch and wait for the display to give a stable reading (less than one minute), which is the percentage content of helium in the gas mixture tested.

Note: Always turn off the power after you take the reading to extend the battery life between charging.

Cautions

1. The Hydrogen Analyzer is a vibration sensitive device. Please avoid mechanical shock while handling. Dropping the unit on a hard floor may cause damage to the unit.
2. When operating the Hydrogen unit out doors, please avoid direct sunlight on the unit.
3. The reading should be taken one minute after turning on the power switch. The power should be turned off after taking the reading.
4. When the unit is not used, always pull up the sensor cap to allow the sensor chamber to be exposed to ambient air.

Operating Principle

The Analyzer measures the Hydrogen content based on the extreme high thermal conductivity of hydrogen gas. The unit consists of two main components: one is a sensor block and the other is the electronic circuit. The patented design allows the unknown gas mixture to flow through the sensing chamber and seal it inside for measurement. Once the gas mixture is sealed inside the sensing chamber, the electronic circuit then measures the difference of the thermal conductivity between the gas mixture and the reference gas. The Hydrogen content is then calculated by the circuit and displayed.

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